

We claim:

1. A graphical user interface (GUI) for interfacing between a user and a controller of test equipment used to test a device under test (DUT), the GUI comprising:
 - a traffic icon operable to facilitate the user's setting of traffic parameters relating to a test of a DUT; and
 - an optics icon operable to facilitate the user's setting of optics parameters relating to the test.
2. A GUI as in claim 1, further comprising a local host icon being operable to present a list of test equipment connected to the GUI to the user for selection of at least one test equipment to conduct the test.
3. A GUI as in claim 1, further comprising:
 - a TX out icon operable to control a transmit power level of a transmitted test signal;
 - a calibration icon operable to control calibration; and
 - a wavelength icon operable to control a wavelength of the transmitted test signal.
4. A GUI as in claim 1, further comprising:
 - an RX in icon operable to display received power;
 - a calibration icon operable to display calibration information;
 - a wavelength icon operable to display a received test signal wavelength;

and

a maximum receive power icon operable to control a maximum power input from the received signal.

5. A GUI as in claim 1, further comprising:

a bitstream icon operable to facilitate the user's setting of non-SONET-framed bitstream parameters relating to the test; and
a SONET icon operable to facilitate the user's setting of SONET parameters relating to the test,

wherein the bitstream icon and the SONET icon are displayed to the user when the traffic icon has been selected.

6. A GUI as in claim 5, further comprising:

a 10GE lan icon operable to facilitate the user's setting of 10GE parameters relating to the test;
an SDH icon operable to facilitate the user's setting of SDH parameters relating to the test; and
an OTN icon operable to facilitate the user's setting of OTN parameters relating to the test,

wherein the 10GE lan icon, the SDH icon and the OTN icon are displayed to the user when the traffic icon has been selected.

7. A GUI as in claim 5, further comprising:

a POS icon operable to facilitate the user's setting of POS parameters relating to the test; and
a 10GE wan icon operable to facilitate the user's setting of 10GE wan parameters relating to the test,

wherein the POS icon and the 10GE wan icon are displayed to the user
when the SONET icon has been selected.

8. A GUI as in claim 5, further comprising a SONET bitstream icon operable to facilitate the user's setting of SONET bitstream parameters relating to the test, the SONET bitstream icon being displayed to the user when the SONET icon has been selected.

9. A GUI as in claim 8, further comprising:
a SONET set up icon operable to facilitate the user's setting of SONET setup parameters relating to the test; and
a SONET bitstream definition icon operable to facilitate the user's setting of bitstream definition parameters relating to the test,

wherein the SONET set up icon and the SONET bitstream definition icon are displayed to the user when the SONET bitstream icon has been selected.

10. A GUI as in claim 9, wherein the SONET bitstream definition parameters comprise:

a plurality of PRBSs;
0's only;
1's only;
alternating 1's and 0's;
at least one ratio of 1's to 0's;
user files;
inversion of a transmitted signal;
inversion of a received signal; and

injection of errors at a user selectable rate.

11. A GUI as in claim 9, further comprising:
 - a first byte value icon operable to facilitate the user's setting of a byte value for at least one SONET overhead byte;
 - a second byte value icon operable to facilitate the user's setting of a byte value for at least one SONET path byte;
 - an enable overhead sequencing icon operable to facilitate the user's setting of overhead sequencing options; and
 - an unscramble payload icon operable to control unscrambling of a payload of a testing signal,
 - wherein the first byte value icon, the second byte value icon, the enable overhead sequencing icon and the unscramble payload icon are displayed to the user when the SONET set up icon has been selected.
12. A GUI as in claim 11, wherein the overhead sequencing parameters comprise a user selectable number of repetitions for at least one frame.
13. A GUI as in claim 11, further comprising:
 - a binary icon;
 - a hexadecimal icon; and
 - a decimal icon,
 - wherein the binary icon, the hexadecimal icon and the decimal icon are displayed to the user when the first and/or second byte value icons have been selected.

14. A GUI as in claim 13, further comprising a hexadecimal keypad icon operable to facilitate the user's entering a hexadecimal value, the hexadecimal keypad icon comprising 16 numeric keys and being displayed to the user when the hexadecimal icon has been selected.
15. A GUI as in claim 13, further comprising a binary keypad icon operable to facilitate the user's entering a binary value, the binary keypad icon comprising 2 numeric keys and being displayed to the user when the binary icon has been selected.
16. A GUI as in claim 5, further comprising:
 - a bitstream definition icon operable to facilitate the user's setting of non-SONET-framed bitstream definition parameters relating to the test; and
 - a bitrate icon operable to facilitate the user's setting of non-SONET-framed bitrate parameters relating to the test,
wherein the bitstream definition icon and the bitrate icon are displayed to the user when the non-SONET-framed bitstream icon has been selected.
17. A GUI as in claim 16, wherein the non-SONET-framed bitrate definition parameters comprise:
 - a plurality of PRBSs;
 - 0's only;
 - 1's only;
 - alternating 1's and 0's;
 - at least one ratio of 1's to 0's;
 - user files;

inversion of a transmitted signal;

inversion of a received signal; and

injection of errors at a user selectable rate.

18. A GUI as in claim 16, wherein the non-SONET-framed bitrate parameters comprise at least one bitrate.

19. A GUI as in claim 1, wherein the optics parameters comprise:

no optical degradation;

phase jittering;

amplitude interference; and

signal filtering.

20. A GUI as in claim 19, wherein the optics parameters further comprise user customizable parameters comprising:

OSNR level;

eye stress; and

extinction ratio.

21. A GUI as in claim 1, further comprising:

a start icon operable to control the test;

at least one signal configuration icon operable to facilitate the user's setting of signal configuration parameters relating to the test;

at least one transmit test icon operable to facilitate the user's setting of transmit test parameters relating to the test;

at least one receive test icon operable to facilitate the user's setting of receive test parameters relating to the test; and

at least one time test icon operable to facilitate the user's setting of time test parameters relating to the test,

wherein the at least one signal configuration icon, the at least one transmit test icon, the at least one receive test icon and the at least one time test icon are displayed to the user when the start icon has been selected.

22. A GUI as in claim 21, wherein the at least one signal configuration icon comprises:

a traffic configuration icon operable to facilitate the user's setting of traffic configuration parameters;

an OSNR configuration icon operable to facilitate the user's setting of OSNR configuration parameters;

an extinction ratio icon operable to facilitate the user's setting of extinction ratio parameters;

a frequency offset icon operable to facilitate the user's setting of frequency offset parameters; and

an interfering laser icon operable to facilitate the user's setting of interfering laser parameters.

23. A GUI as in claim 21, wherein the at least one transmit test icon comprises:

a path penalty icon operable to facilitate the user's setting of path penalty parameters; and

a DUT transmit power icon operable to facilitate the user's setting of DUT transmit power parameters.

24. A GUI as in claim 21, wherein the at least one receive test icon comprises:

 a sensitivity icon operable to facilitate the user's setting of sensitivity test parameters; and
 an S/X measurement icon operable to facilitate the user's setting of S/X measurement parameters.

25. A GUI as in claim 24, wherein the at least one receive test icon further comprises:

 an overload icon operable to facilitate the user's setting of overload parameters;
 a flag switching icon operable to facilitate the user's setting of flag switching parameters; and
 a BER versus OSNR icon operable to facilitate the user's setting of BER versus OSNR parameters.

26. A GUI as in claim 24, further comprising a sensitivity test start icon operable to control the test, the sensitivity test start icon being displayed to the user when the sensitivity test icon has been selected, and wherein the sensitivity test parameters comprise:

 power;
 BER; and
 pass criteria.

27. A GUI as in claim 26, further comprising a sensitivity test results display being displayed to the user when the sensitivity test start icon has been selected, the sensitivity test results display comprising:
 - an indication of whether the DUT passed or failed the sensitivity test or whether pass or fail is unknown; and
 - a graph of BER versus power.
28. A GUI as in claim 26, further comprising an add configuration icon operable to facilitate the user's selection of additional tests to be performed on the DUT.
29. A GUI as in claim 24, further comprising an S/X measurements result display being displayed to the user when the S/X measurements icon has been selected, the S/X measurements result display comprising:
 - an indication of whether the DUT passed or failed the S/X measurement or whether pass or fail is unknown; and
 - a graph of BER versus power.
30. A GUI as in claim 29, wherein the graph comprises two plots.
31. A GUI as in claim 21, wherein the at least one time test icon comprises:
 - a strip chart icon operable to facilitate the user's setting of strip chart parameters;
 - an error distribution analysis icon operable to facilitate the user's setting of error distribution parameters; and
 - an event timing icon operable to facilitate the user's setting of event timing parameters.

33. A GUI as in claim 1, further comprising:

 a BERT set up icon operable to facilitate the user's setting of bit error rate test parameters; and
 a BERT start icon operable to control starting the test.

34. A graphical user interface (GUI) for interfacing between a user and a controller of test equipment used to test a device under test (DUT), the GUI comprising:

 a test icon operable to facilitate the user's setting of test parameters relating to a test to be performed on the DUT;
 an IntelliScript icon operable to facilitate the user's selection of a plurality of tests to perform on the DUT;
 a manual icon operable to facilitate the user's manual overriding of software-driven parameters relating to the test;
 a calibration icon operable to facilitate a calibration of the test equipment; and
 a monitor icon operable to facilitate the user's monitoring of the test.

35. A GUI as in claim 34, further comprising:

 a sensitivity icon operable to facilitate the user's setting of sensitivity parameters;
 an overload icon operable to facilitate the user's setting of overload parameters;
 an S/X penalty icon operable to facilitate the user's setting of S/X penalty parameters; and

a start icon operable to control the plurality of tests and display results of the plurality of tests;

wherein the sensitivity icon, the overload icon, the S/X penalty icon and the start icon are displayed when the IntelliScript icon has been selected.

36. A graphical user interface (GUI) for controlling test equipment comprising:

a first field operable to set at least one traffic protocol parameter; and
a second field operable to set at least one signal quality parameter.

37. A GUI as in claim 36, wherein the at least one traffic protocol parameter comprises at least one of:

non-SONET-framed bitstream;

10GE lan;

SONET framed bitstream;

SONET framed POS;

SONET framed 10GE wan; and

OTN.

38. A GUI as in claim 37, wherein the at least one traffic protocol comprises at least one of:

PRBS;

0's only;

1's only;

alternating 1's and 0's;

at least one ratio of 1's to 0's;

user file;

bitrate selection; and
byte selection.

39. A GUI as in claim 36, wherein the at least one signal quality parameter comprises at least one of:
signal power;
phase jitter;
amplitude interface;
degrade OSNR;
extinction ratio; and
eye stress.

40. A method for controlling test equipment comprising:
providing a graphical user interface (GUI), the GUI comprising a first field operable to facilitate a user to set at least one traffic protocol parameter and a second field operable to facilitate the user set at least one signal quality parameter; and
operating upon user settings to affect the test equipment.

41. A method for controlling test equipment as in claim 40, wherein the at least one traffic protocol parameter comprises at least one of:
non-SONET-framed bitstream;
10GE lan;
SONET framed bitstream;
SONET framed POS;

SONET framed 10GE wan; and

OTN.

42. A method for controlling test equipment as in claim 41, wherein the at least one traffic protocol comprises at least one of:

PRBS;

0's only;

1's only;

alternating 1's and 0's;

at least one ratio of 1's to 0's;

user file;

bitrate selection; and

byte selection.

43. A method for controlling test equipment as in claim 40, wherein the at least one signal quality parameter comprises at least one of:

signal power;

phase jitter;

amplitude interface;

degrade OSNR;

extinction ratio; and

eye stress.